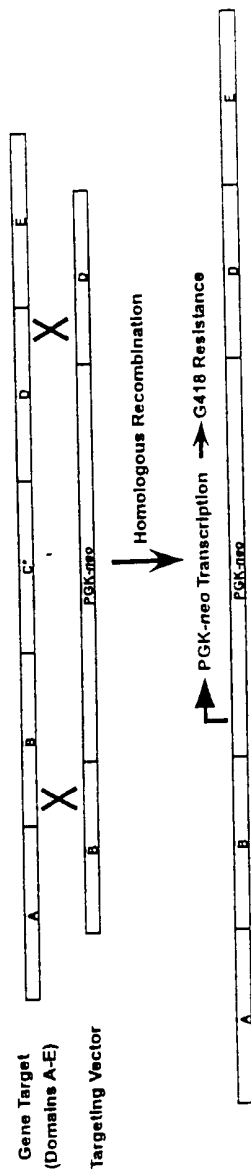
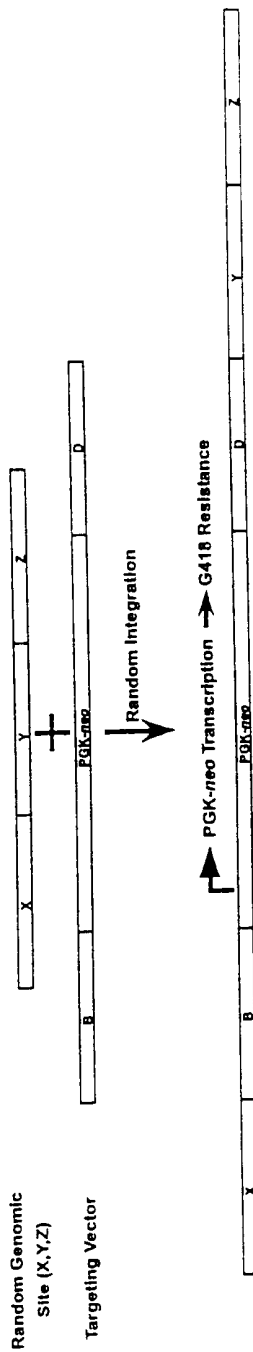


FIGURE 1

**A. Homologous Recombination: G418 Resistance. Targeting Vector Flanked by "A" and "E"**



**B. Random Integration: G418 Resistance. Targeting Vector Flanked by "X" and "Y"**

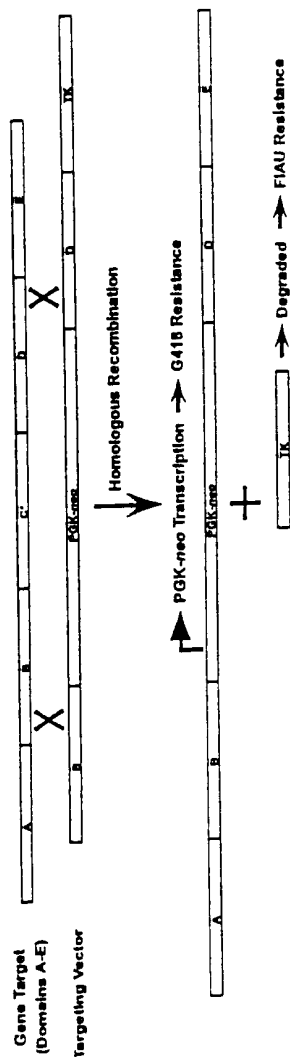


DISTINGUISH EVENTS BY SCREENING MOLECULARLY (PCR & SOUTHERN)

FIGURE 2

A.

Homologous Recombination: G418 Resistance + FIAU Resistance



B.

Random Integration: G418 Resistance + FIAU Sensitivity

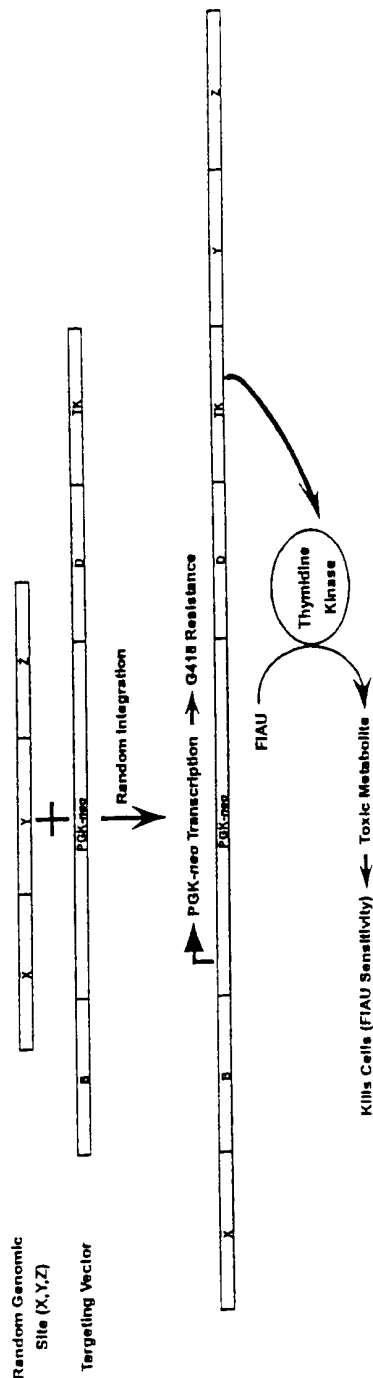


FIGURE 3

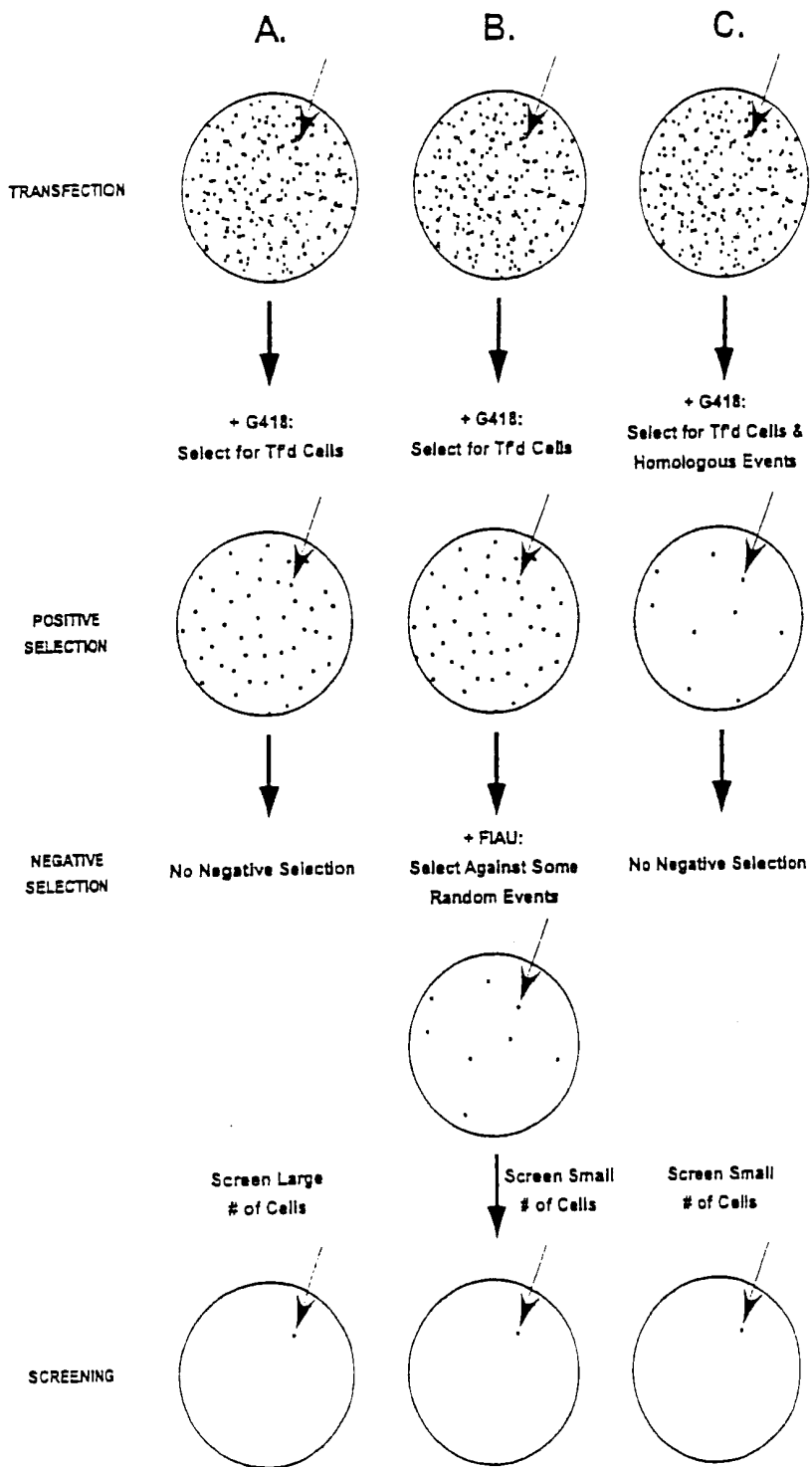
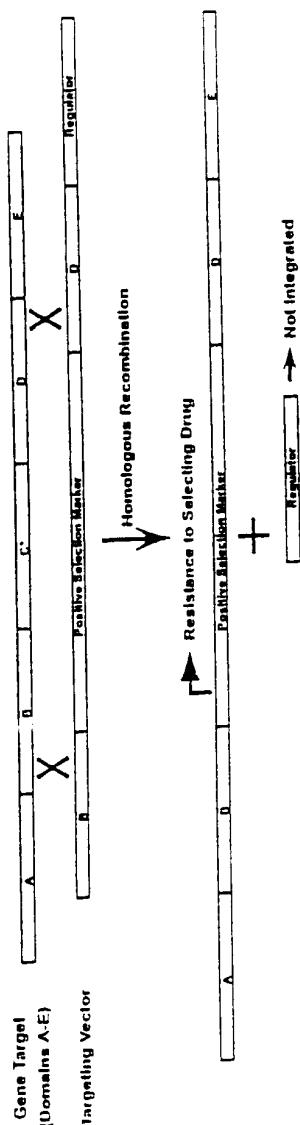


FIGURE 4

# **A. Homologous Recombination: Resistance to Selecting Drug**



# **B. Random Integration: Sensitivity to Selecting Drug**

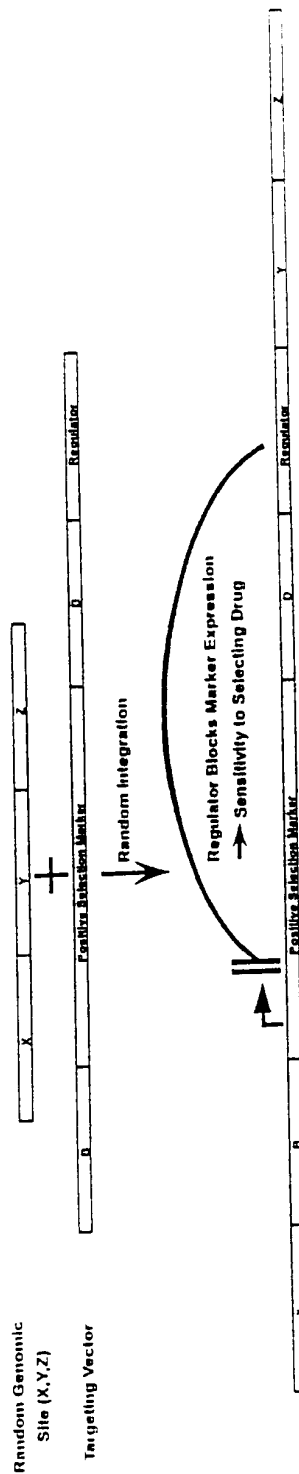


FIGURE 5



A	B	C	D	E
A	B	C	D	E

8 POK-102 0

B POK-REG-009 D

IACO #1 IACO #2 Mel  
IInd III  
AAGTCTCTTTTATGSGGTGGGATTCGCGCATTTTCGCACACTCTCAAAAGCCGACCTTCGCCGCTTTTATGSGGTGGGATTCGCGCATTTTCGCACACTCTCAAAAGCCGATATGCGA

**B**

PgK-*lacO-neo*

D

NLS/*lacI*

Mes<sub>1</sub> (NLS)

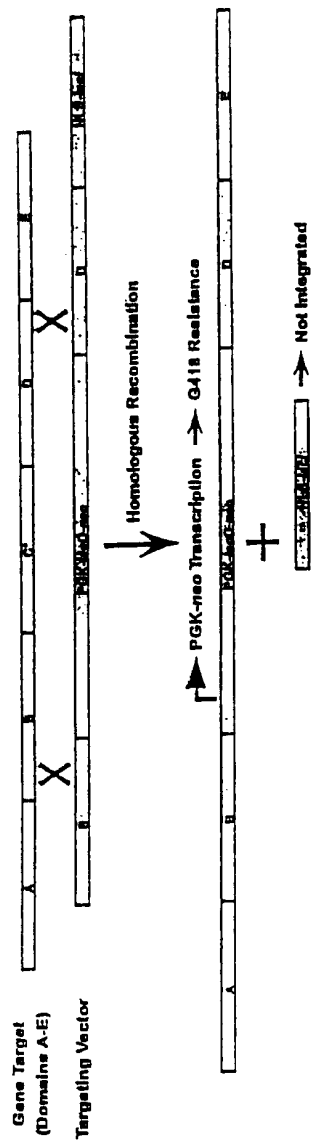
Mes<sub>1</sub> (*lacI*)

CATCTCCCTGGCGAGCCTTCCTCAAAAGAAGGGAAGGCATTACCAATTAAGCTTTACG

FIGURE 6 B-E

A.

## Homologous Recombination: G418 Resistance



B.

## Random Integration: G418 Sensitivity

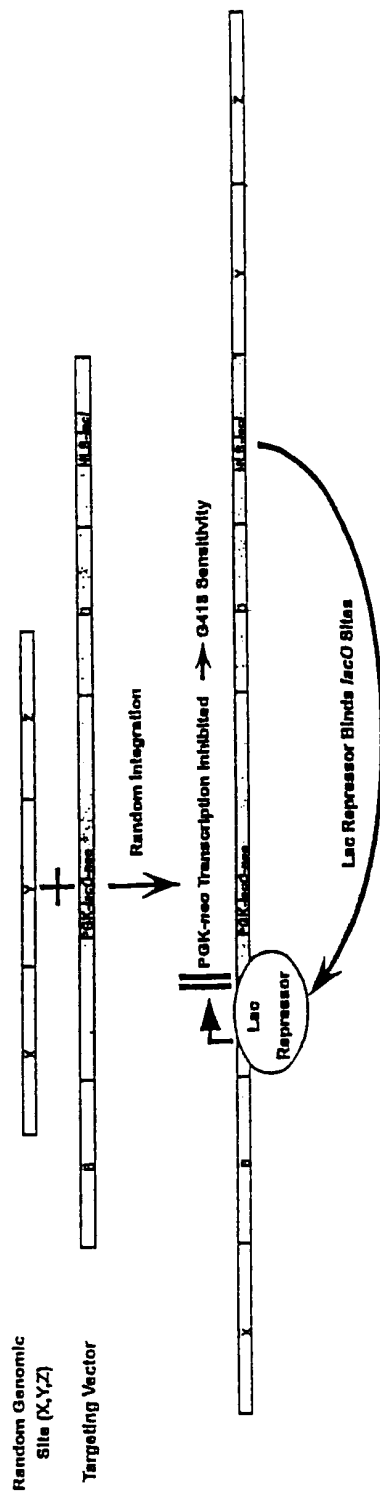


FIGURE 7



<u>Oligo #</u>	<u>Sequence (5' to 3')</u>
10164	CGGAATTCACCTGCCAGACCATGCCAAAAAGAAGAGAAAGGTCATGAPACCAGTAACGTTATACG
10165	CGGAATTCTCACTGCCCGCTTTCCAGTCG
10218	GCATTCTCGCAAGCTTCAAAAGCGCACGTCTGCCGCGCTATTGTGAGCGCTCACAATTCCGGGCGCTTTCGACCTG
9959	TCATCAATTCTGCAGAC
10219	TGCGCTTTTGAAGCTTGCGAGAATGCCGGGATTGTGAGCGCTCACAATAGGACCTTCGCGCCCGCC
4201	CAGGAAACAGCTATGAC

FIGURE 8

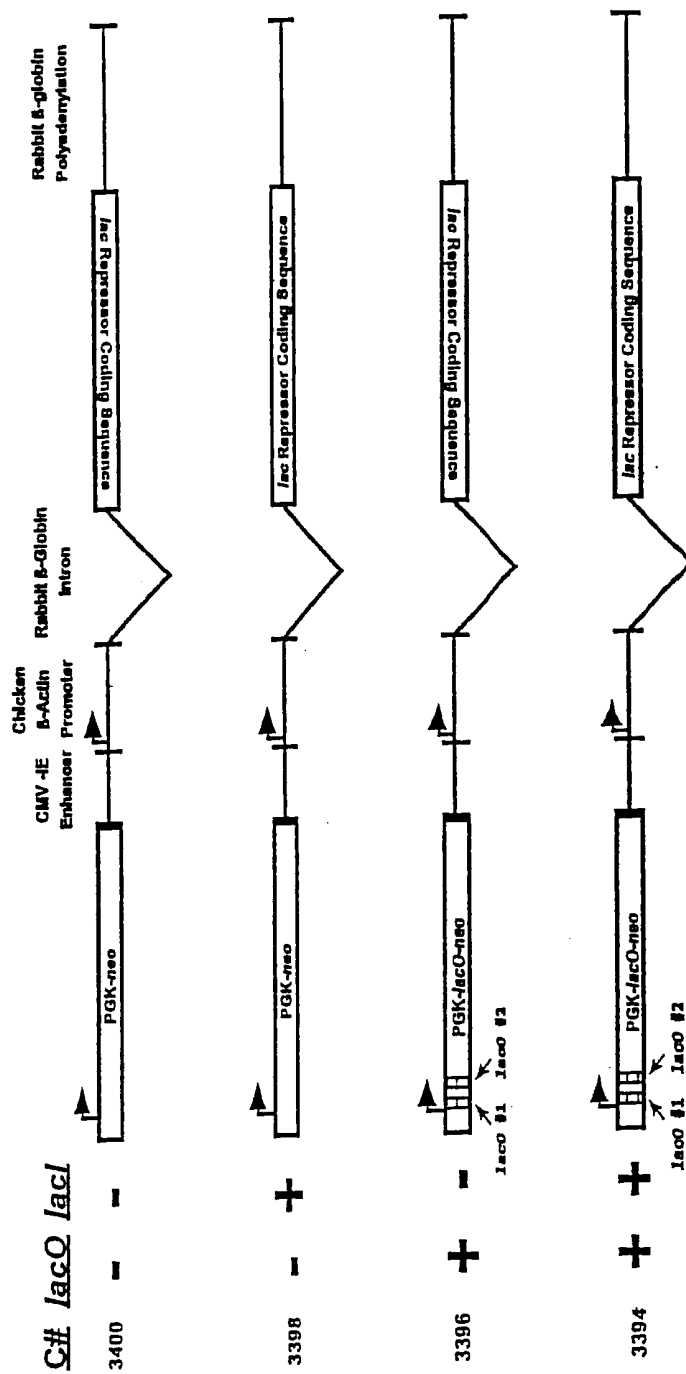


FIGURE 9

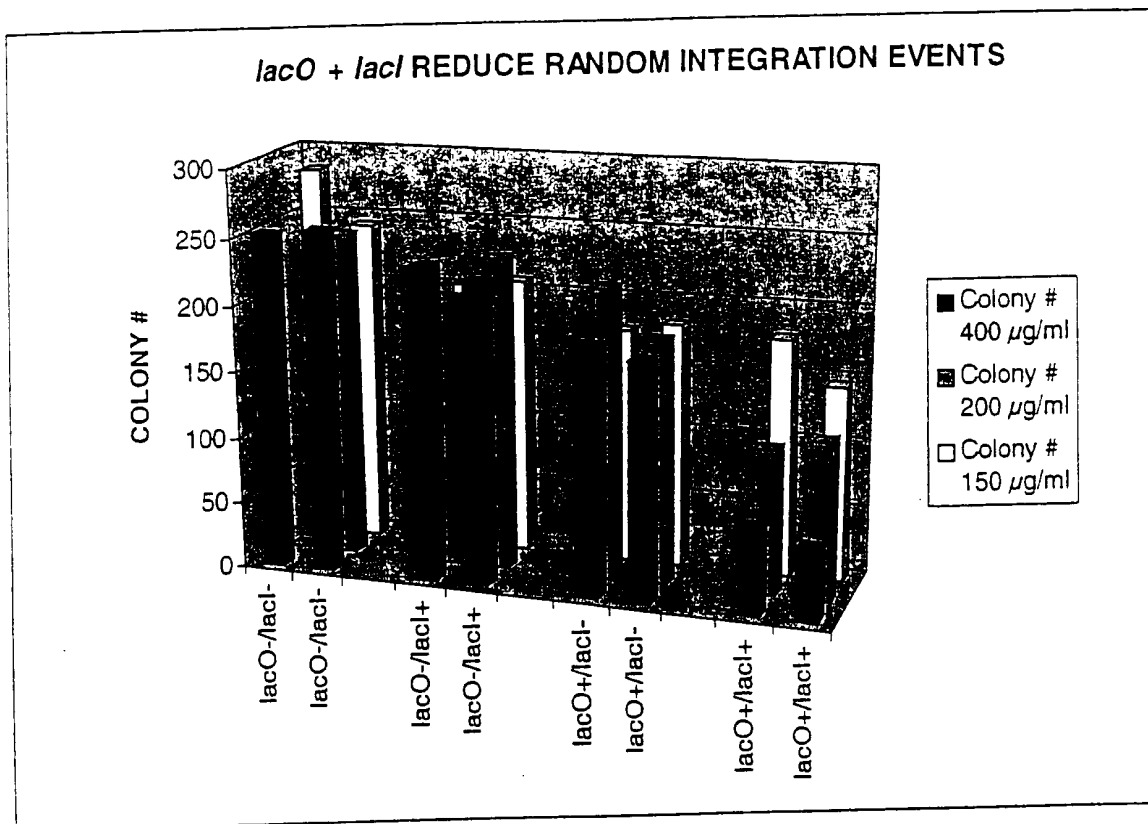


FIGURE 10

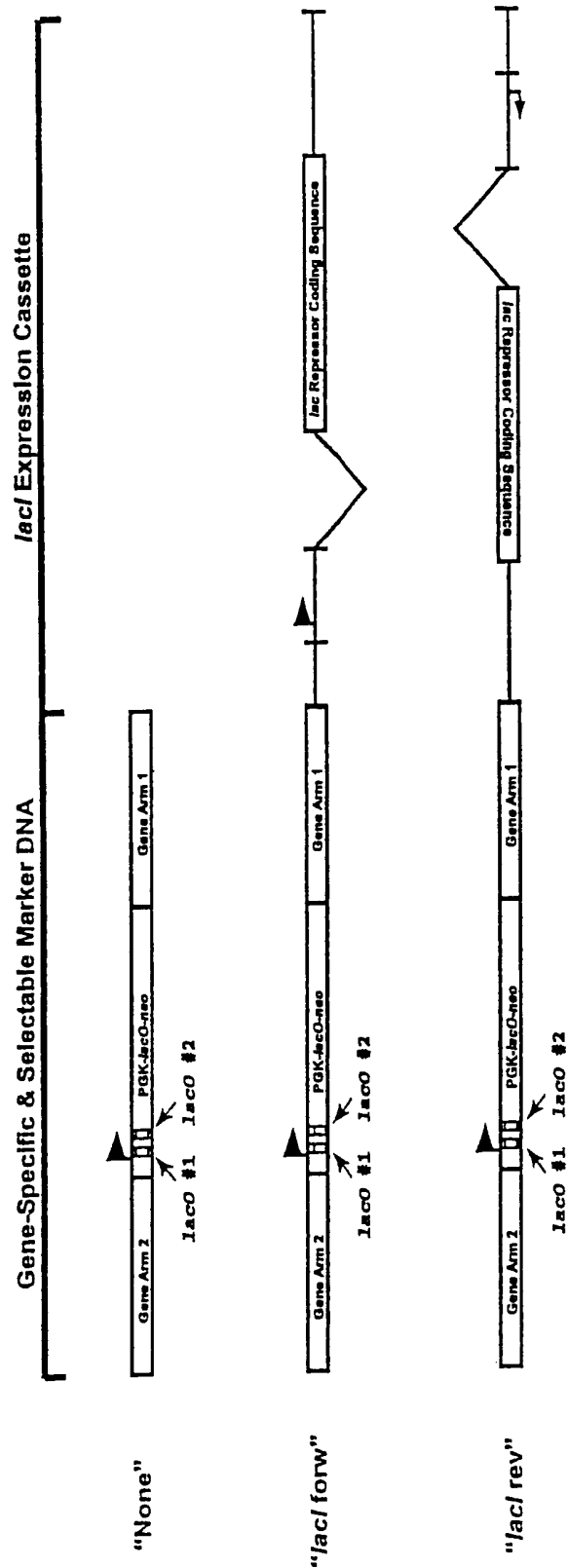


FIGURE 11

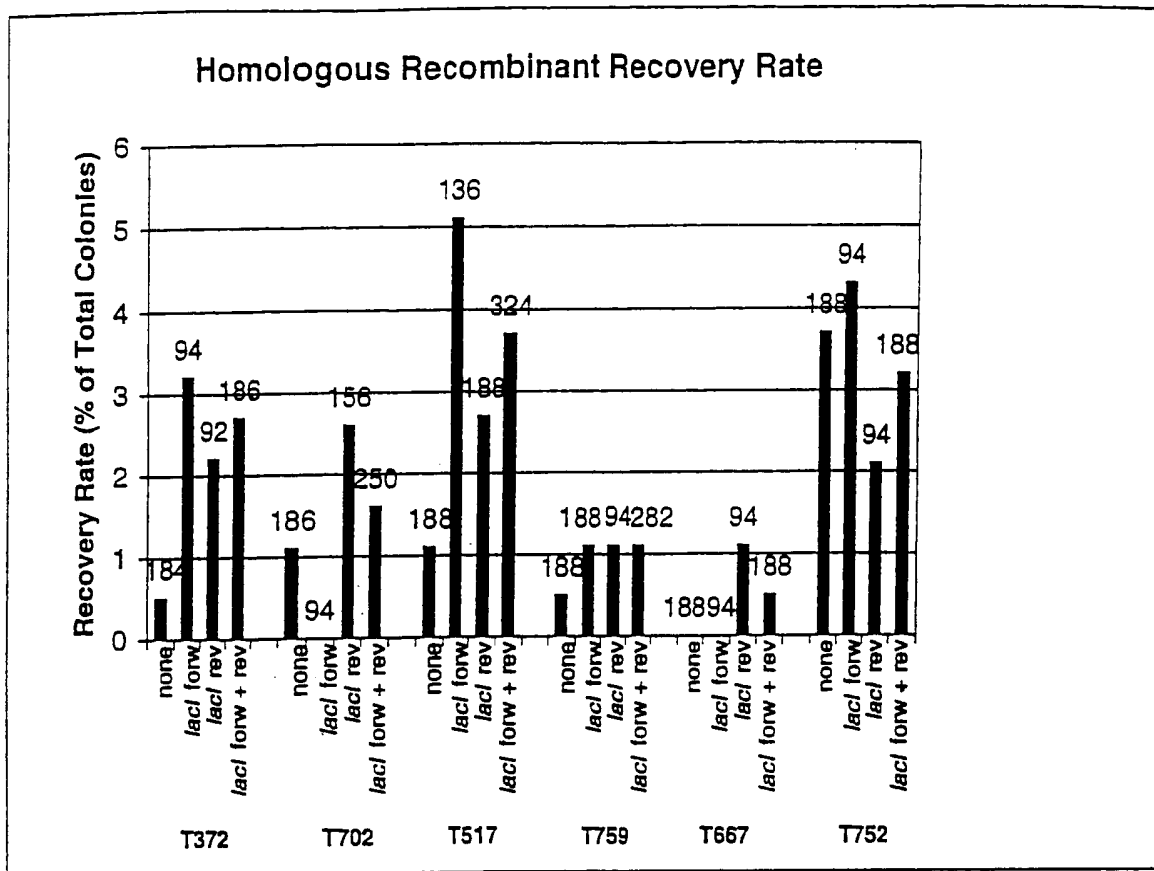


FIGURE 12

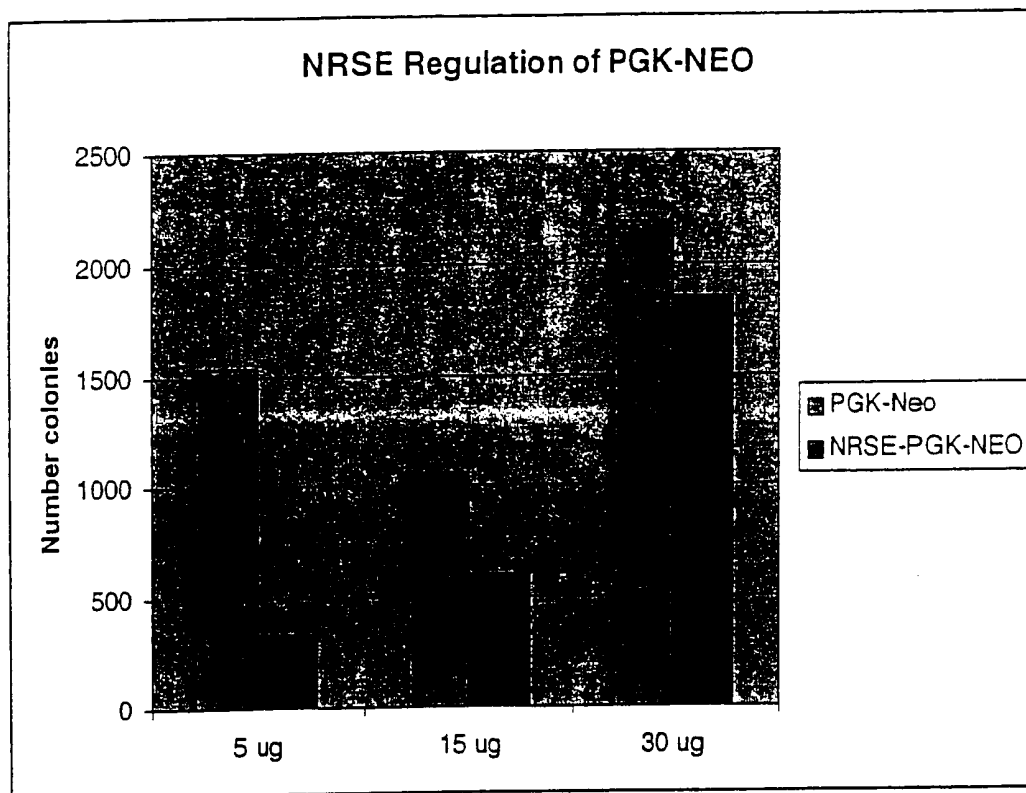


FIGURE 13

GCGGCCGCGAGTCGACGAGGCCGCGCGATTAAATTAAGGCTCgacattgattattgactag  
 ttattaatagtaataattacggggtcattagttcatagcccatatatggaggtccgcgt  
 tacataacttacggtaaatggccgcctgggtgaccgcccacgacccccgcccattgac  
 gtcaataatgacgtATgttcccatagtaacgccaatagggaactttccattgacgtcaatg  
 ggaggagattttacggtaaaactgcccacttggcagtagacatcaagtgtatcatatgccaag  
 taogccccctattgacgtcaatgacggtaaatggccgcctggcattatgcccagtagAT  
 GACCTTACGGGACTTTCCTACTTGGCAGTACATCTACGTATTAGTCATCGCTATTACCAT  
 GGTtcgaggtgagccccacgttctgcttcactctccccatctccccccccctccccacccc  
 caattttgtattttattttattttttaattattttgtgcagcgatggggggcggggggggggg  
 gggcgcgcgccaggcggggcgggggcgggggcgagggcgggggcgagggcgagaggt  
 gcggcgggcagccaatcagagcgggcgcgctccgaaagtttccttttatggcgagggcgggcgg  
 cggcgggcgggccctataaaAAGCGAAGCGCGCGGCGGGCGGGAGTCGCTGCGTTGCCTTCG  
 CCCCCTGCCCCGCTCCGCGCCGCCCTCGCGCCGCCCGCCCCGGCTCTGACTGACCGCGTTA  
 CTCCCACAGGTGAGCGGGCGGGACGGCCCTTCTCCTCCGGGCTGTAATTAGCGCTTGGTT  
 TAATGACGGCTCGTTTCTTTTCTGTGGCTGCGTGAAAGCCTTAAAGGGCTCCGGGAGGGC  
 CCTTTGTGCGGGGGGAGCGGCTCGGGGGGTGCGTGCGTGCTGTGTGTGTGCTGGGAGCGC  
 CGCGTGCGGGCCGCGCTGCCCGGCGGCTGTGAGCGCTGCGGGCGCGCGCGGGCTTTGT  
 GCGCTCCGCGTGTGCGCGAGGGGAGCGCGGGCGGGGGCGGTGCCCGCGGGTGCAGGGGGTGT  
 CTGCGAGGGGAACAAAGGCTGCGTGCGGGGTGTGTGCGTGCGGGGGGTGAGCAGGGGGTGT  
 GGGCGCGGGCGGTGCGGCTGTAAACCCCCCTGCACCCCCCTCCCCGAGTTGCTGAGCAG  
 GCCCGGCTTCGGGTGCGGGGCTCCGTGCGGGGCGTGGCGCGGGGCTCGCCGTGCCGGGCG  
 GGGGGTGGCGGCAGGTGGGGGTGCGGGGGCGGGGCGGGGCCGCTCGGGCCGGGGAGGGCT  
 CGGGGGAGGGGCGCGGGCGGGCCCGGAGCGCGCGGCGGCTGTGAGGCGCGCGCGAGCCGAG  
 CCATTGCCTTTTATGGTAATCGTGCGAGAGGGCGCAGGGACTTCCTTTGTCCCAAATCTG  
 GCGGAGCCGAAATCTGGGAGGCGCCCGCCGACCCCCCTCTAGCGGGCGCGGGCGAAGCGGT  
 GCGGCGCCGGCAGGAAGGAAATGGGCGGGGAGGGCCTTCGTGCGTGCGCGCGCCGCGTC  
 CCCTTCTCCATCTCCAGCTCGGGGCTGCCGAGGGGGACGGCTGCCCTCGGGGGGGACG  
 GGGCAGGGGGGGTTCGGCTTCTGGCGTGTGACCGGCGGctctaGAGCCTCTGCTAACCA  
 TGTTCATGCCCTTCTTCTTTTCTTCTACAGctcctgggcaacgtgctggttgttgtgtgtc  
 tcatcatttttggcaagaattcGCCACCatggtgagcaaggggcgaggagctgttcaccgg  
 ggtggtgcccacctggtcgagctggacggcgacgtaaacggccacaagttcagcgtgtc  
 cggcgagggcgagggcgatgccacctaaggcaagctgaccctgaagttcatctgcaccac  
 cggcaagctgcccgtgcccctggccacccctcgtgaccacccctgacctacggcgtgacgtg  
 cttcagccgctaccccgaccacatgaagcagcagacttcttcaagtcggccatgcccga  
 aggctacgtccaggagcgccaccatcttcttcaaggacgacggcaactacaagaccgcg  
 cgaggtgaagttcgagggcgacaccctggtgaaccgcatcgagctgaagggcatcgactt  
 caaggaggacggcaacatcctggggcacaagctggagtacaactacaacagccacaacgt  
 ctatatcatggccgacaagcagaagaacggcatcaaggtgaacttcaagatccgcccaca  
 catcgaggacggcagcgtgacgtcgccgaccactaccagcagaacacccccatcgggcga  
 cggccccgtgctgctgcccgacaaccactacctgagcaccacagtcggccctgagcaaga  
 ccccaacgagaagcgcgatcacatggtcctgctggagttcgtgaccgcccggcgatcac  
 tctcggcattggacgagctgtacaagtaagaATTCACTCCTCAGGTGCAGGCTGCCTATCA  
 GAAGGTGGTGGCTGGTGTGGCCAATGCCCTGGCTCACAAATACCACTGAGATCTTTTTCC  
 CTCTGCCAAAATTATGGGGACATCATGAAGCCCTTGAGCATCTGACTTCTGGCTAATA  
 AAGGAAATTTATTTTTCATTGCAATAGTGTGTTGGAATTTTTTGTGTCTCTCACTCGGAAG  
 GACATATGGGAGGGCAAATCATTTAAACATCAGAATGAGTATTTGGTTTAGAGTTTGGC  
 AACATATGCCATATGCTGGCTGCCATGAACAAAGGTGGCTATAAAGAGGTTCATCAGTATA  
 TGAAACAGCCCCCTGCTGTCCATTCTTATTCATAGAAAAGCCTTGACTTGAGGTTAGA  
 TTTTTTTTATTTTTGTTTTGTGTTATTTTTTTCTTTAACATCCCTAAAATTTCTTAC  
 ATGTTTTTACTAGCCAGATTTTTCTCTCTCTGACTACTCCAGTCATAGCTGTCCCTC  
 TTCTCTTATGAAGATCctcgcacctgcagcccaagctCGGGGCCAGGTGGGCCGAGCGAT  
 CGCGAGAATTGGCTTAAGTGAGTCGTATTACGGACTGGCCGTCGTTTTACAACGTCGTG  
 ACTGGGAAAACCCTGGCGTTACCCAACTTAATCGCCTTGCAGCACATCCCCCTTTCGCCA  
 GCTGGCGTAATAGCGAAGAGGCCCGCACCGATCGCCCTTCCCAACAGTTGCGCAGCCTGA

FIGURE 14A

ATGGCGAATGGCGCTTCGCTTGGTAATAAAGCCCGCTTCGGCGGGCTTTTTTTTGGTTAA  
 CTACGTCAGGTGGCAGCTTTTCGGGGAAATGTGCGCGGAACCCCTATTTGTTTATTTTTCT  
 AAATACATTCAAATATGTATCCGCTCATGAGACAATAACCCTGATAAATGCTTCAATAAT  
 ATTGAAAAAGGAAGAGTATGAGTATTCAACATTTCCGTGTCGCCCTTATTCCTTTTTTG  
 CGGCATTTTGCCTTCCTGTTTTTGGCTCACCCAGAAACGCTGGTGAAAGTAAAAGATGCTG  
 AAGATCAGTTGGGTGCACGAGTGGGTACATCGAACTGGATCTCAACAGCGGTAAAGATCC  
 TTGAGAGTTTTTCGCCCCGAAGAACGTTCTCCAATGATGAGCACTTTTAAAGTTCTGCTAT  
 GTGGCGCGGTATTATCCCGTGTGACGCCGGGCAAGAGCAACTCGGTGCGCCGATACACT  
 ATTTCTCAGAATGACTTGGTTGAGTACTCACCAGTCACAGAAAAGCATCTTACGGATGGCA  
 TGACAGTAAGAGAATTATGCAGTGCTGCCATAACCATGAGTGATAAAGTGGCGGCAACT  
 TACTTCTGACAACGATCGGAGGACCGAAGGAGCTAACCGCTTTTTTGCACAACATGGGGG  
 ATCTTCTAACTCGCCTTGATCGTTGGGAACCGGAGCTGAATGAAGCCATACCAAACGACG  
 AGCGTGACACCACGATGCCTGTAGCAATGGCAACAACGTTGCGCAAACTATTAAGTGGCG  
 AACTACTTACTCTAGCTTCCCGGCAACAATTAATAGACTGGATGGAGGCGGATAAAGTTG  
 CAGGACCCTTCTGCGCTCGGCCCTTCCGGCTGGCTGGTTTATTGCTGATAAATCTGGAG  
 CCGGTGAGCGTGGGTCTCGCGGTATCATTGCAGCACTGGGGCCAGATGGTAAGCCCTCCC  
 GTATCGTAGTTATCTACACGACGGGGAGTCAGGCAACTATGGATGAACGAAATAGACAGA  
 TCGCTGAGATAGGTGCCTCACTGATTAAGCATTTGGTAACTGTCAGACCAAGTTTACTCAT  
 ATATACTTTAGATTGATTTACCCCGGTTGATAATCAGAAAAGCCCCAAAAACAGGAAGAT  
 TGTATAAGCAAATATTTAAATTGTAAACGTTAATATTTTGTAAATTCGCGTTAAATTT  
 TTGTTAAATCAGCTCATTTTTTAAACCAATAGGCCGAAATCGGCAAAATCCCTTATAAATC  
 AAAAGAATAGCCGAGATAGGGTTGAGTGTGTTCCAGTTTGGAAACAAGAGTCCACTATT  
 AAAGAACGTGGACTCCAACGTCAAAGGGCGAAAAACCGTCTATCAGGGCGATGGCCCACT  
 ACGTGAACCATCACCCAAATCAAGTTTTTTTGGGGTCGAGGTGCCGTAAAGCACTAAATCG  
 GAACCCTAAAGGGAGCCCCGATTTAGAGCTTGACGGGGAAAGCGAACGTGGCGAGAAAG  
 GAAGGGAAGAAAGCGAAAGGAGCGGGCGCTAGGGCGCTGGCAAGTGTAGCGGTACAGCTG  
 CGCGTAACCACACACCCGCCGCGCTTAATGCGCCGCTACAGGGCGCGTAAAAGGATCTA  
 GGTGAAGATCCTTTTTGATAATCTCATGACCAAAATCCCTTAACGTGAGTTTTCTGTTCCA  
 CTGAGCGTCAGACCCCGTAGAAAAGATCAAAGGATCTTCTTGAGATCCTTTTTTTCTGCG  
 CGTAATCTGCTGCTTGCAAACAAAAAAACCACCGCTACCAGCGGTGGTTTTGTTTGGCCGA  
 TCAAGAGCTACCAACTCTTTTTCCGAAGGTAAGTGGCTTCAGCAGAGCGCAGATACCAAA  
 TACTGTTCTTCTAGTGTAGCCGTAGTTAGGCCACCACTTCAAGAACTCTGTAGCACCGCC  
 TACATACCTCGCTCTGCTAATCCTGTTACCAAGTGGCTGCTGCCAGTGGCGATAAGTCGTG  
 TCTTACCGGGTTGGACTCAAGACGATAGTTACCGGATAAGGCGCAGCGGTGCGGCTGAAC  
 GGGGGGTTCTGTGCACACAGCCAGCTTGGAGCGAACGACCTACACCGAACTGAGATACCT  
 ACAGCGTGAGCTATGAGAAAGCGCCACGCTTCCCGAAGGGAGAAAGGCGGACAGGTATCC  
 GGTAAGCGGCAGGGTCGGAACAGGAGAGCGCACGAGGGAGCTTCCAGGGGGAACGCCTG  
 GTATCTTTATAGTCCTGTGCGGGTTTCGCCACCTCTGACTTGAGCGTCGATTTTTGTGATG  
 CTCGTACAGGGGGCGGAGCCTATGGAAAAACGCCAGCAACGCGGCCTTTTTACGGTTCTT  
 GGCCTTTTGTGCTGGCCTTTTGTCTACATGTAATGTGAGTTAGCTCACTCATTAGGCACCC  
 AGGCTTTTACACTTTATGCTTCCGGCTCGTATGTTGTGTGGAATTGTGAGCGGATAACAAT  
 TTCACACAGGAAACAGCTATGACCATGATTACGCCAAGCTACGTAATACGACTCACTAG

FIGURE 14B